

CLAIMS

1. A control system for controlling one or more manipulators (2), wherein the control system comprises one or more computers (4, 6) and one or more drive units (8) for controlling the manipulator, **characterized** in that the control system comprises a plurality of separate modules (12, 14, 16, 18, 20) adapted to handle different functions, whereby each of the modules has its own power supply (26) and is adapted to communicate with at least one of the other modules, and that said one or more computers (4, 6) and drive units (8) are arranged in the modules.

2. A control system according to claim 1, **characterized** in that the control system comprises drives that control motors driving the movements of the manipulator, an axis computer (6) that provides control signals to the drives, and a main computer (4) that is adapted to execute a program with instructions for the movements and that supplies the axis computer with control instructions, whereby one of said modules is a main-computer module (12) comprising the main computer (4) and another one of said modules is a drive module (14) comprising the axis computer (6).

3. A control system according to claim 2, **characterized** in that the control system comprises at least two separate drive modules.

4. A control system according to claim 3, **characterized** in that each drive module (14) is adapted to control a manipulator (2).

5. A control system according to any of claims 2-4, **characterized** in that said drive module (14) comprises a drive unit (8) that includes one or more drives.

6. A control system according to any of claims 2-5, **characterized** in that one of said modules is a transformer module (18) that includes a transformer.

5 7. A control system according to any of the preceding claims, **characterized** in that one of said modules is a control module (16) that comprises the control panel of the control system.

10 8. A control system according to any of the preceding claims, **characterized** in that each one of modules is surrounded by its own casing (15).

15 9. A control system according to any of the preceding claims, **characterized** in that the modules are arranged physically separated.

20 10. A control system according to any of the preceding claims, **characterized** in that at least some of the modules are adapted to communicate via Ethernet.

25 11. A control system according to any of the preceding claims, **characterized** in that said manipulator is an industrial robot (2).

12. A control system according to any of the preceding claims, **characterized** in that the control system comprises at least three modules.

30 13. Use of a control system according to any of claims 1-11 for controlling an industrial robot.

35 14. A method for controlling one or more manipulators (2), wherein the control system comprises one or more computers (4, 6) and drive units (8) for controlling the manipulator, **characterized** in that said one or more computers and drive units are arranged in modules (12, 14, 16, 18, 20), and that the modules are arranged with their own power supply

(26) and that the modules are brought to communicate with at least one of the other modules.

15. A method according to claim 14, **characterized** in that
5 the control system comprises drives that control motors driving the movements of the manipulator, an axis computer (6) that provides control signals to the drives, and a main computer (4) that is adapted to execute a program with in-
structions for the movements and that supplies the axis
10 computer with control instructions, whereby the axis computer and the main computer are arranged in separate modules.

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